WHAT IS CLAIMED IS:

1. An analog subscriber matching circuit for a full electronic exchange comprising:

a first pair of transistors (Q1, Q2) supplying a line current to a subscriber through a tip terminal and a ring terminal;

a second pair of transistors (Q3, Q4) having a Darlington structure and connected to said first and second transistors (Q1, Q2) respectively, and limiting a maximum current;

a first pair of current supervising resistors (R1, R2) connected to emitters of said first pair of transistors (Q1, Q2) respectively, performing a current feedback operation to limit said maximum current, and detecting in a voltage form a line current flowing through telephone lines;

a first resistor (R3) connected between a collector of one of said first pair of transistors (Q1) and a collector of one of said second transistor (Q3), preventing one of said first pair of transistors (Q1) from being saturated;

a second resistor (R4) connected between a collector of the other one of said second transistors (Q2) and a collector of the other one of said second pair of transistors (Q4), preventing said transistor (Q2) from being saturated;

a group of bias resistors (R5, R6, R7) determining a threshold value of said maximum current and maintaining said first pair of transistors (Q1, Q2) in an active state;

a first pair of capacitors (C5, C6) superimposing a received AC audio signal

on a DC line current;

a pair of composite impedances (ZL1, ZL2) matching a line characteristic impedance;

a third resistor (R11) converting said line current flowing through one of the current supervising resistors (R1) into an input current for detecting an off-hook state;

an operational amplifier (AMP3) inversion-amplifying a signal inputted through said third resistor (R11); and

a fourth transistor (Q6) converting a level of a signal inversion-amplified by said operational amplifier.

2. The analog subscriber matching circuit of claim 1, further comprising a pair of amplifiers (AMP1, AMP2) connected to said composite impedances (ZL1, ZL2), respectively, for receiving and amplifying the audio signal.

3. The analog subscriber matching circuit of claim 2, further comprising a pair of protection elements (CR1, CR2) for protecting said amplifiers for amplifying said audio signal from an over current through lines.

4. The analog subscriber matching circuit of claim 3, further comprising a dummy load resistor (R8) connected between the collector of one of said first pair of transistors (Q1) and the collector of the other one of said first pair of transistors (Q2) for supplying a bias current to said first pair of transistors (Q1, Q2) to prevent

said first pair of transistors (Q1, Q2)from being saturated when no load exists on said line.

5. The analog subscriber matching circuit of claim 4, further comprising a pair of temperature compensating diodes (D1, D2) connected to opposite sides of said bias resistor group (R5, R6), respectively, for preventing said first pair of transistors (Q1, Q2) from being overheated due to a variation of the threshold value of said maximum current caused by the heat generated from said first pair of transistors (Q1, Q2) due to the line current.

6. The analog subscriber matching circuit of claim 5, further comprising a plurality of bypass capacitors (C1, C2, C3) preventing a bad influence on call communications due to the generation or induction of noise in said DC line current supply.

7. The analog subscriber matching circuit of claim 6, further comprising a fifth resistor (R13) determining an amplification factor of said signal inputted through said third resistor (R11).

8. The analog subscriber matching circuit of claim 7, further comprising a sixth resistor (R10) detecting a ring trip voltage if a telephone handset is hooked off during supply of a call signal.

9. The analog subscriber matching circuit of claim 8, further comprising a seventh resistor (R12) converting the voltage detected by said sixth resistor (R10) into a ring trip current.

10. The analog subscriber matching circuit of claim 9, further comprising a second capacitor (C7) allowing said operational amplifier (AMP3) to serve as a low-pass filter so that an AC amplification factor is greatly lowered to remove AC ripple components included in said ring trip current.

11. The analog subscriber matching circuit of claim 10, further comprising a field effect transistor (FET1) allowing said operational amplifier (AMP3) to serve as a low-pass filter in a ring current supply state.